

REMARKS

Claims 1-16 are in the case.

Claims 1, 2, and 4-16 are currently amended to more particularly point out what applicants regard as their invention. No new matter has been introduced.

In paragraph 3 of the official action, claim 1 was rejected under 35 USC 112 as being indefinite regarding the phrase “each of pillars of a greenhouse” is not a correct phrase and the pillars were not positively recited and therefore lack antecedent basis.

By the amendment, the term pillars has been positively recited as “pillars which support the rectangular frame, the pillars having top edges,” providing proper antecedent basis for the amended language “wherein the rectangular frame is coupled to the top edges of the pillars.

The amended phrase is supported by Figures 6-9 of the present application.

Claims 1-16 were rejected in paragraph 6 of the official action as unpatentable over Spoar ‘280 in view of Shannon ‘784 under 35 USC 103(a).

Claim 1 is directed to a structure comprising

“a rectangular frame arranged horizontally,” which is exemplified in Fig. 2;

“a rectangular main beam arranged vertically on the rectangular frame” which is exemplified in Fig. 3 where 12a-12f are the members forming the rectangular main beam 12;

“a principal rafter supporting the rectangular main beam” exemplified as member 13 in Figs. 1, 4, 7, 8, and 12;

“wherein the rectangular frame is coupled to the top edges of the pillars” exemplified as members 21 in Figs. 6, 7, and 8;

“wherein the rectangular main beam comprises upper and lower chords arranged in

parallel at the upper and lower sides, and end vertical members provided between both ends of the chords” exemplified in Fig. 3;

“wherein the rectangular frame and the rectangular main beam are sterically-disposed in an inverted T shape” exemplified in Figs. 1, 4, 6, 7, 8, & 12; and

“wherein one end of the principal rafter is coupled to the upper chord of the rectangular main beam and the other end of the principal rafter is coupled to the rectangular frame at both sides of the rectangular main beam” exemplified in Figs. 1, 4, 7, 8, and 12.

Spoar does not teach or suggest such a structure, alone or in combination with Shannon.

Rather, Spoar describes multiple layers 14 arranged horizontally, but the multiple layers 14 constitute the top edges of walls 10 and 12. See col. 2, lines 22-28 of Spoar. Therefore, the multiple layers 14 described in Spoar are a component of a support part (walls 10 and 12) which supports a roof frame, and is not a component of a roof frame. In addition, the multiple layers 14 are functioning as a thermal break and are not functioning as a frame at all. See col. 2, lines 25-26 of Spoar.

In contrast, a rectangular frame (11) of the present invention is a component of a structure (1) used as a roof frame, and is not a component of a support part (2) which supports a roof frame. See Claims 1, 4, 7 and 10, and Figures 1 and 8 of the present application. In addition, the rectangular frame (11) of the present invention functions as a frame and is not functioning as a thermal break at all.

Spoar describes a truss 20 arranged vertically. However, the truss 20 does not transfer a vertical load to a support part which supports a roof frame because the position of an upper bar 24 is lower than the top of two inclined members 40. See Figure 2 of

Spoar. The truss 20 described in Spoar can only transfer a horizontal load to a support part which supports a roof frame.

In sharp contrast, a rectangular main beam (12) of the present invention can transfer a vertical load as well as a horizontal load to a support part which supports a roof frame because one end of a principal rafter (13) is coupled to the upper chord (12a) of the rectangular main beam (12), and the position of the upper chord (12a) is higher than the top of the principal rafter (13) thereby. See Figures 1, 4, 7 and 8 of the present application.

Spoar describes two inclined members 40. However, the members 40 are not supporting a truss 20. Rather, an end gable truss 36 having the members 40 is supported by the truss 20 so that it does not fall over. In addition, the members 40 are coupled to one another. Therefore, one end of the member 40 is not coupled to the upper bar 24 of the truss 20. See Figure 2 of Spoar. The truss 20 described in Spoar is coupled to a horizontal member 46. See col. 2, lines 58-60 of Spoar. As a result, all of the loads applied to the truss 20 are transmitted to a wall 10, and are not transmitted to the members 40. Similarly, all of loads applied to the members 40 are transmitted to a wall 10, and are not transmitted to the truss 20.

In contrast, a principal rafter (13) of the present invention is supporting a rectangular main beam (12). One end of the principal rafter (13) is coupled to the upper chord (12a) of the rectangular main beam (12). See Claims 1, 4, 7 and 10, and Figures 1, 4, 7 and 8 of the present application. As a result, a part of loads applied to the rectangular main beam (12) is transmitted to the principal rafter (13) and is dispersed.

These important differences between the claimed invention and Spoar are not supplied by Shannon US 2,541,784 (US'784) which is cited only for its teaching of pillars 10 (in Shannon Fig. 1). However, pillars are not the only difference between Spoar and

the claimed invention. Shannon does not disclose a rectangular main beam arranged vertically on a rectangular frame sterically-disposed in an inverted T shape and therefore does not supply the gaps between Spoar and the present invention.

Accordingly, the applicant maintains that the present invention is not rendered obvious over Spoar and in view of Shannon and therefore reconsideration and withdrawal of all grounds of rejection is respectfully requested.

Respectfully submitted,

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